AMENDMENTS TO THE CLAIMS

1 though 6 (Cancelled)

7. (currently amended) A method for calculating optimal flexible savings account contributions for a particular user, comprising the steps of:

formulating a dynamic ~~numerical~~ programming model based on a consumer's objective function~~; said consumer's objective function further~~ comprising ~~the steps of: formulating~~ a utility function, said dynamic programming model ~~;~~ incorporating health plan parameters~~;~~, ~~of health plans~~ exogenous parameters, preference parameters, and a health transition equation;

assigning values to the exogenous parameters by

assembling recent health care use and cost data for a reference population,

acquiring personal and health information ~~from users~~ on the user ~~themselves~~ and on his/her ~~their~~ household members~~;~~,

estimating the distribution of out-of-pocket costs the user and his/her household is likely to face in the coming year in various health plans, based on the experience of comparable households in the reference population~~;~~

calibrating the health transition equation with historical claims data linked to the user's health ~~status~~information~~;~~, and

estimating a marginal tax rate based on the user's personal information;

estimating the user's risk aversion;

using numerical calculation methods to estimate other said preference parameter values by:

solving the ~~numerical~~ dynamic programming model ~~by numerical calculation methods~~ with assigned values for the exogenous parameters, with the estimated risk aversion for said particular user,, and with a plurality of different test values for ~~the~~ other preference parameters~~;~~, and

~~estimating~~ selecting as the estimated preference ~~parameters~~ parameter values ~~using~~ those test parameter values which correspond to solutions of the dynamic ~~program~~ programming model which are close to observed historical expenditures of like-situated members of a given health plan~~,~~;

~~inputing an estimate of a user's risk aversion,~~

~~inputing an estimate of the user's income; and~~

solving the dynamic programming model by numerical calculation methods for optimal flexible spending account contributions for a particular user in one or more particular health plans (or no health insurance), with the assigned exogenous parameters, the estimated risk aversion and with the estimated values for the preference parameters; and

outputting the optimal contributions.

8. (original) A computer-based method for calculating optimal flexible savings account contributions comprising the steps of:

processing data and performing numerical solutions with a central processing unit;

storing data and computer programs on a mass storage device;

storing data and commands in volatile memory;

formulating a consumer's objective function which maximizes expected future utility, namely

$$\max_{G,\{m_\varepsilon,c_\varepsilon\}_{\varepsilon=-\infty}^{\infty}} EU = \int_{-\infty}^{\infty} U(h,c)f(\varepsilon,\theta)d\varepsilon$$

where,

G represents the FSA contribution;

$\{m_\varepsilon,c_\varepsilon\}_{\varepsilon=-\infty}^{\infty}$ represents the consumption plan for every possible health shock ε;

$U(h,c)$ represents the utility of the consumer from health status h and consumption of non-medical goods c;

f(ε, θ) is the probability density function of the distribution for health shocks, where θ parameterizes the distribution of health shocks and will depend on the characteristics of the consumer.

9. (original) The method of claim 8 further comprising the step of:
using

$$U(hc) = \begin{cases} \left((1-\delta)h^{\rho} + (\delta)c^{\rho}\right)^{1/\rho} & \text{if } h \geq h_{min} \\ 0 & \text{if } h < h_{min} \end{cases}$$

as the instantaneous utility function,
where, ρ < 1, $\delta \in [0,1]$ and h_{min} are the parameters of the utility function.

10. The method of claim 8 further comprising the step of:
using

$$h = f(h_0, m, \varepsilon; \eta)$$

as an estimate of the health transition equation,
where ϵ represents shocks to health in period.

11. (original) The method of claim 8 further comprising the step of:
using

$$\varepsilon \sim F(\varepsilon;\theta) \quad t = 1 \ldots 12$$

for the probability distribution from which the health shocks are drawn,
where ϵ is assumed normally distributed and where F(.) is the cumulative density function of the distribution of shocks, and θ parameterizes that distribution.

12. (original) The method of claim 8 further comprising the steps for:
defining a health transition function; and
defining an asset transition function.

13. (original) The method of claim 8 further comprising the steps for:
solving the numerical model by dynamic programming methods.

14 though 18 (Cancelled)

19. (currently amended) A system for calculating optimal flexible savings account contributions comprising:
at least one computer;
an algorithm for estimating the optimal flexible spending account contribution which includes
a consumer's objective function;
an instantaneous utility function;
a residual utility function;
a health transition equation;
a transition equation for assets;
a transition equation for total medical expenditure;
exogenous parameters which have assigned values;
preference parameters which have initially assigned test values;
said health transition equation calibrated with historical claims data linked to the user's status;
said algorithm forming a dynamic programming model which is first solved on said computer by numerical calculation methods with assigned exogenous parameters and with test values for the preference parameters ~~;~~
~~estimated~~ in order to obtain estimated preference parameters ~~using~~ based on preference parameter test values which correspond to solutions of the dynamic program which are close to observed historical expenditures of like-situated members of a given health plan; and
which is then solved ~~a solution of the dynamic programming model~~ by numerical calculation methods for optimal flexible account contribution for a particular user

with assigned exogenous parameters and with said estimated preference values ~~for the preference parameters~~.

20. (currently amended) A computer-based system for calculating optimal flexible savings account contributions comprising:

a central processing unit for processing data and performing numerical solutions;

a mass storage device for storing data and computer programs;

volatile memory for storing data and commands;

a numerical model comprising ~~wherein:~~

a consumer's objective function which maximizes expected future utility,

$$\max_{G,\{m_\varepsilon,c_\varepsilon\}_{\varepsilon=-\infty}^{\infty}} EU = \int_{-\infty}^{\infty} U(h,c)f(\varepsilon,\theta)d\varepsilon$$

where,

G represents the FSA contribution;

$\{m_\varepsilon,c_\varepsilon\}_{\varepsilon=-\infty}^{\infty}$ represents the consumption plan for every possible health shock ε;

$U(h,c)$ represents the utility of the consumer from health status h and consumption of non-medical goods c;

f(ε, θ) is the probability density function of the distribution for health shocks, where θ parameterizes the distribution of health shocks and will depend on the characteristics of the consumer.

an instantaneous utility function;

a residual utility function;

a health transition equation;

a transition equation for assets;

a transition equation for total medical expenditure;

values assigned to exogenous parameters; and

test values assigned to preference parameters;

wherein

the health transition equation is calibrated with historical claims data linked to the user's status;

said numerical model is solved by using numerical methods on the central processing unit, utilizing data stored on the mass storage device and in volatile memory, said solution being the optimal flexible spending plan contribution.

21. (original) The system as in claim 20 further comprising:

$$U(hc)=\begin{cases}\left((1-\delta)h^{\rho}+(\delta)c^{\rho}\right)^{1/\rho} & \text{if } h\geq h_{\min}\\ 0 & \text{if } h<h_{\min}\end{cases}$$

as the instantaneous utility function,

where, ρ < 1, $\delta\in[0,1]$ and $h_{\min}$ are the parameters of the utility function.

22. (original) The system of claim 20 further comprising:

$$h=f(h_{t},m,\varepsilon;\eta)$$

ht = f(ht-1, mt, ϵt) as an estimate of the health transition equation, where ϵt represents shocks to health in period t.

23. (original) The system of claim 20 further comprising:

$$\varepsilon\sim F(\varepsilon;\theta)\quad t=1...12$$

as the probability distribution from which the health shocks are drawn, where ϵ is assumed normally distributed and where F(.) is the cumulative density function of the distribution of shocks, and θ parameterizes that distribution; and

calculating θ by dynamic programming.

24. (currently amended) The ~~method~~ <u>system</u> of claim 20 further comprising:

a health transition function; and

an asset transition function.

25. (currently amended) The method of claim 20 ~~further comprising~~ wherein: dynamic programming is used as the numerical method for solving the numerical model.